

ABSTRACT OF THE DISCLOSURE

A method of converging a step size control for an adaptive filter of a communication channel including: (1) initializing a nominal step size value and a penalty point value; (2) combining the nominal step size value and the penalty point value to generate a step size value; and (3) dynamically changing the step size value in response to a characteristic measure of a quality of the communication channel. The step size value is changed by adjusting the nominal step size value, the penalty point value, or both. In a preferred embodiment the penalty point value is adjusted dependant on: (1) a tone originating from the far end (2) full convergence (3) the power level of a residual error signal (4) the channel's near-end background noise and/or (5) weak double-talk in the communication channel. The nominal step size value is adjusted when an achieved initial combined loss is about 15 dB or greater and is reset by divergence.